PATENT ABSTRACTS OF JAPAN

(11)Publication number : **06-095707**

(43)Date of publication of application : **08.04.1994**

(51)Int.CI. G05B 13/04

G05B 13/02

(21)Application number : **04-243523**

(22)Date of filing : **11.09.1992**

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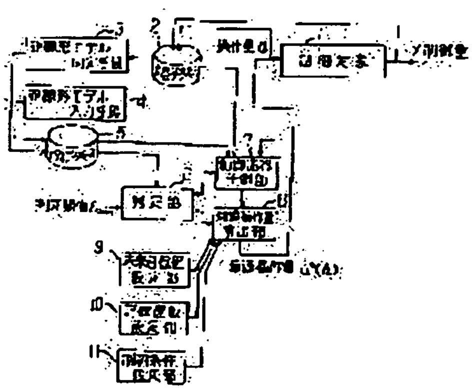
(54) MODEL FORECAST CONTROLLER



(57)Abstract:
PURPOSE: To provide the model forecast controller which can be applied to a control object having a nonlinear characteristic by using sequential quadratic programming to execute the control operation of a nonlinear evaluation function and a nonlinear constraint derived from a nonlinear model.
CONSTITUTION: A manipulated variable (u) inputted to a control object 1 and a controlled variable (y) outputted from the object 1 are observed, and an obtained time series data group is stored in a response data base 2, and a nonlinear model is identified by a nonlinear model identifying means 3. The model is stored in a model data base 5 and is sent to a control response forecast part 7, and a manipulated variable forecast value is estimated based on past manipulated variable and controlled variable obtained from the response data base 2. An optimum manipulated variable operation part 8 obtains an optimum manipulated variable or an optimum manipulated variable increment by nonlinear programming based on the future target value set by a future target setting part 9 and the control forecast value obtained by part 7. A discriminating part 6 discriminates convergence or not and outputs the optimum manipulated variable at the time of convergence.